AMENDMENTS TO THE CLAIMS

WHAT IS CLAIMED IS:

1.-18. Canceled.

19. (New) A method for brain wave fluctuations analysis performed using computer techniques, comprising:

providing multiple leads for acquiring brain wave signals;

dividing the brain wave signals within a first predetermined period into subsections with a predetermined sampling time;

analyzing the power spectrum of brain wave signal in each said subsection to acquire energy distribution thereof in frequency domain;

analyzing the fluctuations of brain wave signal in each said subsection according to said energy distribution to select a maximal power amplitude and a corresponding frequency thereof; and

forming a fluctuation signal of maximal power amplitude and a fluctuation signal of corresponding frequency by use of all maximal power amplitudes and corresponding frequencies thereof in subsections.

20. (New) The method according to claim 19, further comprising:

cutting the brain wave signal in each subsection by multiplying the said brain wave signal with a selected window function that has a small side lobe amplitude and a fast attenuation;

analyzing the power spectrum of said cut brain wave in each said subsection to acquire the energy distribution thereof in the frequency domain;

analyzing the fluctuations of said cut brain wave signal in each said subsection according to said energy distribution to select a maximal power amplitude and a corresponding frequency thereof; and

forming a fluctuation signal of maximal power amplitude and a fluctuation signal of corresponding frequency with respect to said cut brain wave signal by use of all maximal power amplitudes and corresponding frequencies thereof in subsections.

21. (New) The method according to claim 20, wherein said selected window function is $\omega(n) = 0.5 - 0.5\cos(\frac{2\pi n}{N}), n = 0,1,...N-1.$, wherein n represents sampling point, N represents amount of sampling points in the predetermined time period.

22. (New) The method according to claim 21, further comprising:

analyzing the power spectrum of the product of said fluctuation signal of maximal power amplitude with respect to the brain wave signal and a selected window function; and

forming a brain wave fluctuations by selecting spectrum lines within a predetermined frequencies from said analysis of said power spectrum of the product.

23. (New) The method according to claim 22, further comprising:

selecting multiple dominant spectrum lines with maximal amplitude from the brain wave fluctuations of each lead respectively; and

sorting said multiple dominant spectrum lines according to the value of amplitude by the order of descending to form a supra-slow pedigree of the brain wave sampled by a single lead.

24. (New) The method according to claim 23, further comprising:

selecting dominant spectrum lines with a same frequency from all the dominant spectrum lines of said leads; and

accumulating said selected dominant spectrum lines with a same frequency to form a general pedigree of said supra-slow pedigree.

25. (New) The method according to claim 24, further comprising presenting the data of said general supra-slow pedigree with graphs.

26. (New) The method according to claim 24, further comprising the step of counting times that a power corresponding to each fundamental frequency becomes an optimal value for each lead.

27. (New) The method according to claim 26, wherein the power of the fundamental frequency is obtained by adding up that of multiple periodic frequencies of the fundamental frequency if the fundamental frequency is not less than 3 mHz.

28. (New) The method according to claim 24, further comprising presenting the power value of the dominant frequency and a corresponding frequency according to the space position distribution of said leads.

29. (New) The method according to claim 24, further comprising:

calculating the anterior-to-posterior ratio and the left-to-right ratio of the power of each frequency according to the space distribution position of the leads;

presenting the frequencies of which anterior-to-posterior ratio and left-to-right ratio are respectively more than a predetermined value.

30. (New) The method according to claim 24, further comprising presenting the special frequency, different frequency, continuum frequency and optimal frequency of each lead according to the space distribution positions of the leads.

31. (New) The method according to claim 24, further comprising:

sorting the power of each spectrum line in said brain wave fluctuations according to space distribution positions of the leads; and

providing a window in a display interface for showing the power of the spectrum line while being selected according to the space position distribution of said leads.

32. (New) The method according to claim 24, further comprising: at least any one of the following steps:

calculating a general power of each lead by adding up a power corresponding to each said dominate spectrum lines;

calculating average power of each lead, and anterior-to-posterior ratio and left-to-right ratio regarding to the general power in accordance with space distribution positions of said leads;

displaying the power of the fundamental frequencics;

displaying the average power and left-to-right ratio within a predetermined scope in accordance with space distribution positions of said leads; and

displaying the anterior-to-posterior ratio.

33. (New) The method according to claim 32, wherein the predetermined scope for the left-to-right ratio is more than 10 or is less than 0.1.

34. (New) The method according to claim 24, further comprising: the steps of

providing a second predetermined period for sampling a brain wave signal; and

dividing the brain wave signal within the second predetermined period into multiple sections with the first predetermined period.

35. (New) The method according to claim 34, further comprising at least any one of the following steps:

forming and displaying a dynamitic curve of dominant spectrum lines by use of the dominant spectrum lines acquired in each first predetermined period, parameters of which are time and frequency, respectively;

forming and displaying a dynamitic curve of supra-slow pedigree by

use of the supra-slow pedigree acquired in each first predetermined period, parameters of which are time and fluctuation value of each pedigree or each spectrum line of each lead or all leads, respectively;

forming and displaying a dynamitic curve of fundamental pedigree by use of the fundamental pedigree acquired in each first predetermined period, parameters of which are time and the fluctuation values of the fundamental pedigree of the leads, respectively;

forming and displaying a dynamitic curve of space distribution of power by use of the power of each spectrum line of each lead acquired in each first predetermined period, parameters of which are time and the power of each spectrum line of each lead, respectively;

forming and displaying a dynamitic curve of entropy by use of the entropy acquired in each first predetermined period, parameters of which are time and entropy, respectively;

forming and displaying a dynamitic curve of special frequency by use of the special frequency of each lead acquired in each first predetermined period, parameters of which are time and the number of special frequencies appeared for each lead or all leads, respectively;

forming and displaying a dynamitic curve of continuum frequency by use of the continuum frequency of each lead acquired in each first predetermined period, parameters of which are time and the number of continuum frequencies appeared for each lead or all leads, respectively;

forming and displaying a dynamitic curve of space distribution of fundamental pedigree by use of the space distribution of fundamental pedigree of each lead acquired in each first predetermined period, parameters of which

are time and the power of each lead of the fundamental pedigree; and

forming and displaying a dynamitic curve of power spectrum by use of the power spectrum of each lead acquired in each first predetermined period, parameters of which are time and the power of dominant frequencies of each lead.

36. (New) The method according to claim 35, further comprising the step of:

providing a sub-interface for selecting the spectrum lines or the spectrum pedigrees while displaying the dynamitic curves.

37. (New) The method according to claim 36, further comprising the steps of:

providing a means for recording event mark signals; and

marking related parts on the dynamitic curves in accordance with the event mark signals while playing back of brain wave signals and displaying the dynamitic curves.